ONLINE COPY RHIC OPERATIONS PROCEDURES MANUAL
- VALID FOR FIVE (5) WORKING DAYS

RHIC Operations Procedures Manual

4.100.1 CONFIRMATION OF PROPER SYSTEM OPERATION OF PASS FOR ATR MODE SELECTION AND OPERATOR OPTIONS - PART 1 - CONTROLLED ACCESS KEYS

Text Pages 1 through 7
Attachment 1

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Revision No. 0 Approved:

_____ _____
RHIC Project Head Date

Concurrence:

_____ _____
AGS Department Chair Date

Preparer(s): A. Etkin

RHIC-OPM 4.100.1
Category A

4.100.1 Confirmation of Proper System Operation of PASS for ATR Mode Selection and Operator Options - Part 1 - Controlled Access Keys

1.0 Purpose and Scope

Specifies the procedure to be employed during periodic validation of the PASS Access Control System operation of the Controlled Access Keys for ATR operation to ensure system conformance to approved logic state tables.

2.0 Responsibilities

2.1 The RHIC Safety Systems Section Head or the AGS Security Group Head shall:

2.1.1 Ensure that this procedure is executed, at no greater than six month intervals or at such times as required by the Radiation Safety Committee (RSC).

2.1.2 Review and approve the completed checklist.

2.1.3 Report any as-found unsafe failures to the Assistant to the RHIC Project Head for ES&H and the Chairman of the Radiation Safety Committee.

2.2 Members of the RHIC Safety System or AGS Security Group shall:

2.2.1 Conduct this procedure.

2.2.2 Document problems found and repairs made in the PASS Maintenance Log Book.

2.2.3 Use a copy of this procedure and attachment 1 as a checklist.

2.2.4 Inform the RHIC Safety Systems Section Head and the AGS Safety Section Head of any failures found.

2.3 The Chair of the RHIC-AGS Radiation Safety Committee or Designee shall:

2.3.1 Review and approve the completed checklist.

2.3.2 Determine when retesting is required.

3.0 Prerequisites

3.1 Procedures Previously Executed

3.1.1 RHIC - OPM 4.10, 4.20, 4.30, 4.40, 4.41 and 4.50.

3.1.2 AGS - TPL 97-05, TPL 97-06, TPL 97-07, TPL 97-08, TPL 97-09, TPL 97-10, TPL 97-11

3.2 Training

3.2.1 RWT - 002, " Rad Worker 1".

3.2.2 "RHIC Ring Access".

3.2.3 " AGS Ring and Cave Access".

3.2.4 Facility-specific LOTO for AGS Beam Shutoff.

3.2.5 AGS OPM 9.1.16, "Lockout/Tagout for Radiation Safety (RS LOTO)".

3.3 Minimum Personnel

3.3.1 One member [Signal Verifier] of the RHIC Safety System or AGS Access Security Sections.

3.4 Sweep Watchman Box signed out from the Control Room.

4.0 Precautions

4.1 This procedure is only for ATR operation. Additional/alternate procedures must be executed for RHIC operation or G-2 operation.

5.0 Procedure

CAUTION

If at any time either the Division A or B equipment does not show the expected signal result, the test shall be halted, an entry placed in the PASS Maintenance Log Book, the supervisor notified and the necessary repairs conducted. The test procedure shall then be restarted from the beginning.

NOTE 1 ***The state of the system may be verified using the Operator Interface, PLC Development System or Maintenance Panel Views.***

NOTE 2 ***The designation Safe or Crash state are equivalent.***

NOTE 3 ***The designation of states commands shown below refer to the columns on the Operator Interface.***

NOTE 4 ***The area designations in commands shown below refer to the "Buttons" on the Operator Interface.***

NOTE 5 ***The green line connecting "Buttons" on the Operator Interface indicates the sequence of state changes to be followed.***

_____5.1 The Signal Verifier shall place the beam line in a safe off condition by performing a RS LOTO of the BTA Beam or of such Critical Devices as defined by the RSC Chair or Designate [designate which devices are used on record sheet] (AGS OPM 9.1.16, "Lockout/Tagout for Radiation Safety (RS LOTO)").

_____5.2 The Signal Verifier shall request permission from the Operations Coordinator to be able to place all areas in the Controlled or Restricted Access state or in the Beam Enabled state; and to secure all Beam areas.

_____5.3 The Signal Verifier shall set up ALLg2/AGS and W, X, Y areas in the following configuration:

_____Access State: Safe state

_____Access Keys: None Retained

_____Gates: All closed

_____CRASH Actuators: Not Activated and Reset

_____5.4 The Signal Verifier places ALLg2/AGS and W, X, Y areas in the Controlled Access or Restricted state.

_____5.5 The Signal Verifier shall return the following areas to:

_____5.5.1 W swept and All Gates Reset

_____5.5.2 X swept and All Gates Reset

_____5.5.3 Y swept and All Gates Reset

_____5.5.4 U swept and All Gates Reset

_____5.5.5 VT swept and Gate Reset

_____5.5.6 V1Pri swept and Gate Reset

Test system goes to Safe state if remove key while in Beam Enable state.

_____5.6 The Signal Verifier, starting with the system in the following Beam enabled states shall remove the indicated Controlled Access keys. **The Signal Verifier confirms that the designated areas go to the Safe/Crash state.**

_____5.6.1 W Dump in the Beam Enabled state.

_____5.6.1.1 CA3 W, X, Y Safe

_____5.6.2 U/Vt, V1Pri, AGS in the Beam Enabled state.

_____5.6.2.1 CA5 ALLg2/AGS Safe

_____5.6.2.2 CA6 ALLg2/AGS Safe

_____5.6.3 V1Pri areas in the Controlled Access state.

_____5.6.3.1 CA6 ALLg2/AGS Safe

_____5.6.4 V1Pri, V1 Muon areas in the Controlled Access state.

_____5.6.4.1 CA6 ALLg2/AGS Safe

Test system goes to Safe state if try to go to Beam Enable with no keys retained.

_____5.7 The Signal Verifier, starting with the system in the appropriate Controlled Access state and while not retaining any Controlled Access keys, shall attempt to put the system in the following states. **The Signal Verifier confirms that the designated areas go to the Safe/Crash state.**

_____5.7.1 W Dump in the Beam Enabled state. W, X, Y Safe

_____5.7.2 U/Vt, V1Pri, AGS in the Beam Enabled state. ALLg2/AGS Safe

_____5.7.3 V1Pri area in the Controlled Access state. ALLg2/AGS Safe

_____5.7.4 The V1Pri, V1 Muon areas in the Controlled Access state. ALLg2/AGS Safe

Test system goes to Safe state if try to go to beam Enable with one key missing.

_____5.8 The Signal Verifier, starting with the system in the appropriate Controlled Access state and while retaining only the indicated Controlled Access keys, shall attempt to put the system in the following states. **The Signal Verifier confirms that the designated areas go to the Safe/Crash state.**

_____5.8.1 U/Vt, V1Pri, AGS in the Beam Enabled state.

_____5.8.1.1 CA5 ALLg2/AGS Safe

_____5.8.1.2 CA6 ALLg2/AGS Safe

Test system goes to Safe state when retain wrong key.

_____5.9 The Signal Verifier shall put the ALLg2 area in the Restricted Access state.

_____5.9.1 The Signal Verifier shall retain the CA5 key.

_____5.9.2 The Signal Verifier confirms that ALLg2/AGS goes to the Safe state.

_____5.10 The Signal Verifier shall put the U and Vt areas in the Controlled Access state and the Wd area in the Restricted Access state.

_____5.10.1 The Signal Verifier shall retain the CA6 key.

_____5.10.2 The Signal Verifier confirms that ALLg2/AGS areas go to the Safe state.

_____5.11 The Signal Verifier shall put the W, X, Y areas in the Controlled Access state.

_____5.11.1 The Signal Verifier shall retain the CA3 key.

_____5.11.2 The Signal Verifier confirms that the W, X, Y areas go to the Safe state.

Test can again return to designated Beam Enabled state.

_____5.12 The Signal Verifier shall place the following areas in the designated state and verify success.

_____5.12.1 W Dump in the Beam Enabled state.

_____5.12.2 U/Vt, V1Pri in the Beam Enabled state.

_____5.12.3 The V1Pri areas in the Controlled Access state.

_____5.12.4 The V1Pri, V1 Muon areas in the Controlled Access state.

Test keys are different.

_____5.13 The Signal Verifier shall confirm that the CA1 key does not turn the CA2, CA3, CA4, CA5 and CA6 locks in the Main Control Room.

_____5.14 The Signal Verifier shall confirm that the CA2 key does not turn the CA1, CA3, CA4, CA5 and CA6 locks in the Main Control Room.

_____5.15 The Signal Verifier shall confirm that the CA3 key does not turn the CA1, CA2, CA4, CA5 and CA6 locks in the Main Control Room.

_____5.16 The Signal Verifier shall confirm that the CA4 key does not turn the CA1, CA2, CA3, CA5 and CA6 locks in the Main Control Room.

_____5.17 The Signal Verifier shall confirm that the CA5 key does not turn the CA1, CA2, CA3, CA4 and CA6 locks in the Main Control Room

_____5.18 The Signal Verifier shall confirm that the CA 6 key does not turn the CA1, CA2, CA3, CA4 and CA 5 locks in the Main Control Room.

Test - safe to beam enable direct - prohibited.

_____5.19 Starting with the system in the Safe state, the Signal Verifier shall attempt to directly go to the following states. The Signal Verifier confirms that the System remained in the Safe state.

_____5.19.1 W, X, Y areas in the Beam Enabled state.

_____5.19.2 U/Vt, V1Pri, AGS areas in the Beam Enabled state.

_____5.19.3 V1, Muon areas in the Restricted Access state.

_____5.19.4 V1Pri, V1 Muon in Controlled Access state.

_____5.20 Sweep Watchman Box shall be returned to the Control Room

_____5.21 The RS LOTO of the BTA Beam by the Signal Verifier shall be removed as per AGS OPM 9.1.16.

_____5.22 The Signal Verifier completes, dates and signs the rest record sheet. This concludes testing.

_____5.23 The certification of the system is concluded when the Safety section Head and the RSC Chairman approve the completed check log sheets.

6.0 Documentation

6.1 Completed checked and signed copy of this procedure.
6.2 Completed PASS Maintenance Log

7.0 References

7.1 AGS OPM 9.1.16, "Lockout/Tagout for Radiation Safety (RS LOTO)"

Attachments

1. PASS Test Record

Attachment 1

PASS Test Record

Test Date:_____

Signal Verifier [sign]:_____ Life Number:_____ Date:_____

Reviewed by RHIC Safety Section Head:_____ Date:_____

Approved by RSC:_____ Date:_____

Notes:

Fill out Reading Acknowledgment Form